MEDICAL BIOTECHNOLOGY AND NANOBIOTECHNOLOGY (LM49)

(Lecce - Università degli Studi)

Teaching BIOANALYTICAL CHEMISTRY

GenCod A006023

Owner professor Maria Rachele GUASCITO

Teaching in italian BIOANALYTICAL CHEMISTRY

Teaching BIOANALYTICAL CHEMISTRY

SSD code CHIM/01

Reference course MEDICAL BIOTECHNOLOGY AND

Course type Laurea Magistrale

Credits 6.0

Teaching hours Front activity hours: 52.0

For enrolled in 2022/2023

Taught in 2023/2024

Course year 2

Language ENGLISH

Curriculum NANOBIOTECNOLOGICO

Location Lecce

Semester First Semester

Exam type Oral

Assessment Final grade

Course timetable https://easyroom.unisalento.it/Orario

BRIEF COURSE DESCRIPTION

- Introduction to bio-analytical chemical methods and related analysis methodologies.
-Focuses on the most important aspects in all steps of an analytical method to determine biological active compounds in various biological matrices.
- Instrumental methods of advanced analysis for applications in bio-analytical chemistry.
- Main spectroscopic techniques for the chemical analysis of complex biological matrices and interfaces.
- Methods for flow analysis.
-Iphenate techniques: GC, LC, EC coupled with MS and SIMS.
-Surface analytical techniques for bio-interface and biomaterials.
Electrochemical (bio)- sensors.

REQUIREMENTS

Base knowledge analytical chemistry is recommended.

COURSE AIMS

The main objectives of this course are summarized below:

-To apply the basic concepts of analytical chemistry to real biological systems, which are relevant in different fields, mainly human health, environmental control, food safety and biotechnology industry.

-To integrate the bio-recognition and the biological reactions to the analytical methodology.

- To use the most common techniques in chemistry to analyze, separate and identify compounds within a biological framework.

- To apply this knowledge to the resolution of bio-analytical problems.

TEACHING METHODOLOGY	Learning methods consist of formal lectures and integrative lectures making use of slides. Outside these activities, the students are expected to read assigned papers from the scientific literature.
ASSESSMENT TYPE	The exam is oral with a mark out of thirty. The test also includes the discussion of the reports produced by the students relating to their practical laboratory activities.

REFERENCE TEXT BOOKS

1. Bioanalytical Chemistry

By: Susan R. Mikkelsen, Eduardo Cortón
· Publisher: Wiley-Blackwell
· Print ISBN: 9781118302545, 1118302540
· eText ISBN: 9781119057741, 1119057744
· Edition: 2nd

1. Bioanalytical Chemistry

By: Andreas Manz; Nicole Pamme; Dimitri Iossifidis
· Publisher: ICP
· Print ISBN: 9781860943706, 1860943705
· eText ISBN: 9781911298250, 9781860945922, 1860945929